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The Relationship of M.A. Students' Metacognitive and Self-efficacy Beliefs with Their Mental Health

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Abstract

This study aimed to investigate the relationship of students' self-efficacy and meta-cognition with their mental health. In a descriptive-correlation study, 150 M.D. students in Ferdowsi university of Mashhad, Iran during academic year of 2010-2011 were selected randomly and completed Meta-cognitions Questionnaire Wells & Cartwright(2004), General Self-Efficacy Scale Sherer & Maddux(1982)and General Health Questionnaire (Goldberg and Hiller(1972). The results showed statistically significant correlation between self-efficacy and mental health ($r= -0.29$, $p< 0.001$) and meta-cognition and mental health ($r= -0.73$, $p< 0.001$). Totally, 59% of variance of students' mental health can be predicted by their self-efficacy and meta-cognition.

Keywords: Mental Health, Self-efficacy, Meta-cognition;

1. Introduction

The period of studying in university is a challenging and interesting time for students. All students must have enough mental health and self-efficacy to well encounter against various stressful factors and adapt for the existing status (Memichaei & Hetzl, 1975). Then, the study of their mental health and affecting factors may be of research interests.

1.1. Mental Health

World Health Organization (cf. Sarafino, 1998) defines health as complete physical, mental and social welfare that is not limited only to the lack of diseases and disabilities. Teodor (2001) states that mental health is characterized by two manifestations: the lack of mental diseases and life satisfaction and enjoyment. Corsini (1991) describes mental health as a mental mode which is relatively free of anxiety symptoms and also, ability to effectively communicate with others and to well encounter against stressful motivators. Proposing a multidimensional pattern of mental health, Wissing and Fourie (2000) state that mental health has a positive performance nature and includes among others, self-acceptance, positive communication with others, self-direction, domination on environment, setting some goals for life and personal development.

1.2. Self-efficacy

One of factors affecting mental health is self-efficacy, which has a valuable place in different aspects of life and health (Maddux, 2002) and main role in individuals' thinking modes, their decision-making, the quality of their encounter with problems, their depression and anxiety status and so on (Dweck, 1988). Individuals with high self-

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efficacy have ability to modify their negative mental modes (Kim. 2003). Pajares (1997) describes self-efficacy as individuals' judgement on their ability to achieve their own designed performance levels. Powerful self-efficacy results in calmness and can well predict mental health (Pajares & Schunk , 2002). However, individuals need to believe their ability to make changes in order to select appropriate health behaviors. The lack of beliefs in behavioral changes prevents persons from changing their health behaviour to gain better health (Sarafino, 1998). In fact, high self-efficacy correlates with lower mental stress, higher adaptation and higher interest to health and care programs (Bandur & Pastorelli, 1999). Shvlts & Shvlts (1998) argues that individuals with weak self-efficacy avoid obstacles to their lives rather than encountering them effectively and also select unrealistic criteria that result in their frequent faults and unsuccessfulness. These all cause their depression and mental disorders. Endler,, Speer, Jhnson,J. and Fleet. (2001) and Lenz, Elizabeth, Shortrige_Bagget and Lillie (2002) found that general self-efficacy is negatively related to depression and anxiety, as two main components of mental health, and positive self-efficacy beliefs have an effective role in the treatment of mental diseases.

1.3. Meta-cognition

Meta-cognition is another factor affecting mental health. In recent years, it has been considered as a base in studies of mental disorders (Wells, 1995) and has an especial place in human mental health (Wells, 2004). As a multiple concept, meta-cognition incorporates individual's knowledge, processes and strategies for evaluating and monitoring their own cognition (Nelson, Stuart, Howard and Crawley, 1999). Flavell (1977) describes meta-cognition as an individual knowledge of cognitive processes and output or anything that is related to them. In fact, meta-cognition theory reveals that most confronting behaviours have meta-cognitive nature. This should be taken into account in indicating problems relating to mental health. When activated, negative meta-cognitive beliefs result in interfering in information interpretation and threaten mental health (Wells. 1985). Considering the above-mentioned points, this study aimed at investigating the possible relationship between students' self-efficacy from the one hand and meta-cognition from the other hand (as the independent variables) and their mental health (as the dependent variable) and also, determining which of these factors is a stronger predictor for mental health than the other.

1. 2. Methods

2.1. Participants and procedures and Data Analysis

During academic year of 2010-2011, 150 students (100 girls and 50 boys) were randomly selected as the study sample by using stratified sampling method according to their gender among all M.D. students in Ferdowsi University of Mashhad, Iran, as the study population. Statistical methods, especially Pearson's correlation coefficient and multiple regression analysis were used for data analysis.

2.2. Instrumentation

A 30-item short form of the Meta-cognitions Questionnaire (Wells & Cartwright, 2004) was used to measure students' meta-cognitive beliefs in 5 sub-scales (positive worry beliefs, negative worry beliefs, cognitive confidence, negative thought beliefs and cognitive self-awareness or selective attention to mental events). These subscales all have significant correlation with mental health vulnerability and conceptually are related to structures such as self-awareness and cognitive faults. They take real dimensions into accounts and do not emphasize unreal characteristics (Wells & Cartwright, 2004). Shirin-zadeh-Dastgiri et. al. (2008) estimated the reliability of the scale 82%. In this study Kronbach's alpha coefficients was 0.79.

General Self-Efficacy Scale (Sherrer et. al., 1982) with 17 items in likerte type scale was used for measuring students' self-efficacy. Each item has 1-5 scores. The highest and the least scores of the scale are 17 and 85, respectively. The higher the total score is, the higher self-efficacy is. Bosscher and Smith (1998) reported the reliability of the scale about 69%. In this study Kronbach's alpha coefficients was 0.68.

Goldberg mental health scale: This questionnaire was provided by Goldberg (1979) to distinguish (Willmott, 2004). In this research 28 questions – from of mental health questionnaire which has four fragment scales of physical damage, anxiety, depression and social ill- treatment. In this scale, higher scores show lower mental health

and vice versa. Then, the findings related to the subjects' mental health showed negative correlations. Cronbach's alpha coefficient for the scale in the current research amounted to 78%. In this study Kronbach's alpha coefficients was 0.71.

3. Results

Table 1 shows the mean and standard deviation of the subjects' total scores in meta-cognition, self-efficacy and mental health variables by their gender. Girls had higher score mean in mental health than boys.

Table 1. The means and Standard deviations of students' scores in meta-cognition, self-efficacy and mental health variables by their gender

Statistic Parameters	Girls		Boys		Total	
variables	Mean	SD	mean	SD	mean	SD
Meta-cognition	93.29	20.55	92.20	20.25	92.92	20.39
Self-efficacy	60.78	17.49	62.90	18.21	61.48	17.70
Mental Health	22.65	10.70	20.88	11.65	22.06	11.01

Table 2 shows the correlations of predicting variables (i.e. meta-cognition and self-efficacy) and dependent variable (i.e. mental health) by the subjects' gender. Both meta-cognition ($r= -0.29$, $p< 0.001$) and self-efficacy ($r= -0.76$, $p< 0.001$) correlated significantly with mental health. Self-efficacy in both gender had the highest correlation with mental health ($r= -0.77$ for girls, and $r= -0.73$ for boys, $p< 0.001$).

Table 2. Correlation coefficients between predicting and dependent variables

Statistic Parameters	Mental Health					
	Girls		Boys		Total	
Variables	R	N	R	n	r	N
Meta-cognition	-0.32^{***}	100	-0.23^{*}	50	-0.29^{***}	150
Self-efficacy	-0.77^{***}	100	-0.73^{***}	50	-0.7^{***}	150

$^{***}p < .001$ * $p < .05$

Table 3 summarized the results of synchronous regression analysis to estimate the prediction power of the subjects' meta-cognition and self-efficacy in predicting their mental health. The correlation coefficient between the predicting variables and mental health variable was $r= -0.76$. It was found that 59% of variance of mental health can be predicted by both meta-cognition and self-efficacy variables. Analysis of variance for estimating the statistical significance of the correlation coefficient showed significant difference ($F= 105.91$, $p< 0.001$). Then, both meta-cognition and self-efficacy can predict mental health.

Table 3. The results of synchronous multiple regression analysis for predicting mental health in all students

the source of changes	SS	d.f	MS	F	p-value
Regression	10681.93	2	5340.96		
Residual	7412.52	147	50.42	105.91	0.000^{***}
Total	18094.46	149	-		

*** $p < .001$

According to testing the statistical significance of regression coefficients, students' self-efficacy can independently predict their mental health ($t= -13.45$, $p< 0.001$), but meta-cognition can not (Table 4).

Table 4. The results of regression analysis for estimating the statistic significance of independent variables in predicting mental health

predictor variables	regression coefficient b	SE	regression coefficient β	t	p-value
Meta-cognition	-0.05	0.03	-0.10	-1.85	0.06
Self-efficacy	-0.45	0.03	-0.73	-13.45	0.000^{***}

*** $p < .001$

As shown in tables 5 and 6, stepwise regression analysis for girls indicated that both meta-cognition and self-efficacy correlated with their mental health. In the first step, self-efficacy variable was entered into the regression equation and could predict 60% of variance of girls' mental health (r= 0.77, p< 0.001). When meta-cognition variable was entered in the regression equation, both predictors predicted 61% of variance of girl students' mental health (r= 0.78, p< 0.001).

Table 5. Stepwise regression coefficient between predicting variables and mental health in girls

Predictor variable	Change resource	SS	d.f	MS	F	p-value
Self-efficacy	Regression	6808.54	1	6808.54	147.41	0.000***
	Residual	4526.20	98	46.18		
Self- efficacy and Meta-cognition	Regression	7003.70	2	3501.85	78.42	0.000***
	Residual	4331.04	97	44.65		

*** p < .001

Table 6. The results of regression coefficient and determinant coefficient for the studied variables in girls

Criterion variable	Predictor variable	r	R^2	Regression coefficient b	SE	regression coefficient β	t	p-value
Mental Health	Self-efficacy	0.77	0.60	-0.45	0.04	-0.74	-11.38	0.000***
	Meta-cognition	0.78	0.61	-0.07	-0.13	-0.13	-2.09	0.03*

* p < .05 *** p < .001

As shown in tables 7 and 8, the results of stepwise regression analysis for boys revealed that only self-efficacy could predict 54% of variance of boys' mental health (r= 0.73, p< 0.001). The other independent variable, i.e. meta-cognition, could not predict their mental health.

Table 7. Stepwise regression coefficient between predicting variables and mental health in boy students

Predictor variable	Change resource	SS	d.f	MS	F	Sig.
Self-efficacy	Regression	3614.58	1	3614.58	57.05	0.000***
	Residual	3040.69	48	63.34		

*** p < 0.001

Table 8. The results of regression coefficient and determinant coefficient for the studied variables in girl students

Criterion variable	Predictor variable	r	R^2	Regression coefficient b	SE	regression coefficient β	t	Sig.
Mental Health	Self-efficacy	0.73	0.54	-0.47	0.06	-0.73	-7.55	0.000***

*** p < .001

4. Discussion

This study investigated the relationship of students' meta-cognition and self-efficacy with their mental health. We found that there was a significant correlation between meta-cognition and mental health (r= -0.29, p< 0.001). In fact, when negative meta-cognitive beliefs are activated, they disrupt information interpretation and threaten mental health (Wells, 2006). This is in accord with Spada, Nikcevic, Moneta and Ireson's (2006) and Bahrami and Rezvan's (2007) findings. The other finding of our study was that students' self-efficacy significantly correlated with their mental health (r= -0.73, p< 0.001). It can be said that powerful self-efficacy beliefs tend to increase individual calmness and positively affect their mental health (Pajares. & Schunk , 2002). The finding is in agreement with Pakmehr and Ja'fari-thani's (2010) and Siu-kau and Stephen's (2000) findings. In total, 59% of variance of mental health can be predicted by both self-efficacy and meta-cognition. Predicting 73% of variance of boys' mental health,

self-efficacy is a good predictor for their mental health. Besides, 78% of variance of girls' mental health can be predicted by their both self-efficacy and meta-cognition.

In summary, our findings showed that there is a significant correlation between students' meta-cognition, from the one hand and their self-efficacy, from the other hand, and their mental health, and the former variables can predict the latter one. Then, as health is an important indicator of a developed society and mental health is a main factor in an individual's all lifelong affairs and activities, especially in studying activities, it is suggested that other related studies are done in order to identify further factors affecting it and detect factors affecting students' self-efficacy and meta-cognition as two main influencing factors for mental health.

References

Bahrami, F, Rezvan, Sh. (2007). Relation between the anxiety ideation with metacognition beliefs in high school students with generalized anxiety disorder. *Journal of Iranian psychiatry and clinical psychology*, 39, 249-25. (Persian).

Bandura, A., Pastorelli, C., Barbaranelli. C., capra, G.V. (1999). Self- efficacy pathways to childhood depression, *Journal of personslity and social psychology*, 78, 258-265.

Bosscher,R.J., Smit, J. H. (1998).Confirmator analysis of the general self-efficacy scale, *Behavior research and teraphy*, 36, 339-343.

Corsini, R. J. (1999). *The dictionary of psychology*, Publishing office: Brunner, Mazel. (Chapter 1).

Dweck, C.S. and Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256- 273.

Endler, N., Speer, R.L., Jhnson, J., *Fleet, G. L. (2001). General Self- efficacy and control relation to anxiety and cognitive performance. current Psychology, 1, 66- 71.*

Flavell, J. H. (1979). Metacognition and metacognitive monitoring: A new area of cognitive– developmental inquiry, American Psychologist, 34: 906- 911.

Kim, Y. H. (2003). Correlation of mental health problems with psychological construction in adolescence: Final results from a 2 year study, International Journal of Narsing studies, 40, 115-125.

Lenz, E. R., Shortrige,_B., Lillie, M. (2002). *Self_efficacy in Nursing: Research and measurement perspectives*, New York: Spriner publishing company. (Chapter 2).

Maddux, J. E. (2002). *Self- efficacy: the power of believing you can. The handbook of positive psychology*, New York: oxford university press. (Chapter ?).

Memichaei, & Hetzl, B. (1975). Mental health problems amonguniversity students and their relationship to academic failure and withdrawal, *Med J ofAust*, 1, 499-501.

Muris, P. (2002). Relationship between Self- efficacy and symptoms of anxiety disorder and depression in a normal adolescent sample, *Personality and individual defrences*, 32, 337-348.

Nelson, T. O., Stuart, R.B., Howard, G., Crawley, M. (1999). Metacognition and clinical psychology: A preliminary framework for research and practice, *Clinical Psychology and Psychotherapy*, 6, 73–79 .

Pajares, F., Schunk, D. H. (2002). *Self and self-belif in psychology and Education: An historical perspective, Psychology of Education*New York: Academic perss. Chapter 5).

Pajares. F. (1997) . Self- efficacy belifs in academic setting. *review of Educational reaserch*, 66 ,543-578.

Pakmehr, H., Jafari Sani, H. (2010). The relationship between students' self-efficacy beliefs and mental health in Mashhad University of Medical Science. Proceedings of Nursing Students' National Conference, Iran University of Medical Science, Iran, Tehran.

Raggi, A., Leonardi, M., Mantegazza, R., Casale, S., Fioravanti, G. (2010). Social support and self-efficacy in patients with Myasthenia G ravis: a common pathway towards positive health outcomes. Neurological Sciences. 31, 231-235.

Sarafino, Edward P.(1998). Health Psychology Biopsychosocial Interactions. Third edition. New York. Chapter 9).

Sherer, M. , Maddux, J. E , Mercadante, B., Prentice, S., Jacobs, B., Rogers, R.W. (1982) .The self-efficacy scale: Construction and Validation .Psychological Reports, 51, 663-671.

Shirinzadeh dastgiri, S., Goodarzi, M.A., GHanizadeh, A., Taghavi, M. R. (2008). The comparisons of meta-cognitive and responsibility beliefs of individuals with compulsory monomania, diffused anxiety and those of normal individuals, Journal Journal of Iranian psychiatry and clinical psychology, 1, 46-55.

Shvlts, D., Shvlts, S. A. (1998). *Theories of personality*. Translated by Seyed Yahya Mohammadi, Tehran: Institute of publication editing. (Chapter 1). (Persian).

Siu-kau, Ch., Stephen, Y. K. (2000). Effects of Selfefficacy and social suport on the Mental health conditions of Mutual-Aid organization Memberd. *Social behavior and personality*, 28, 413-422.

Spada, M. M., Nikcevic, A.V., Moneta G.B, Ireson, J. (2006). Metacognition as a mediator of the effect of test anxiety on surface approach to studying. *Educ Psychol*, 26, 1-10.

Teodor, K. (2001). *promotion of mental health: Paradigm and programs,* Translated by M, Khajavi, M, Dorosti, M, Zolfaghari motlagh, Organization introduced, Prevention and Cultural Affairs Press. (Chapter 1), (Persian).

Wells, A., Cartwright, S. A. (2004). short form of the Metacognitions Questionnaire: Properties of the MCQ 30, *Behaviour Research and Therapy*, 42, 385- 396.

Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*, Chichester: UK: Wiley. (Chapter 1).

Wells, A. (1995). Meta- cognition and worry: A cognitive model of generalised anxiety disorder, *Behavioural and Cognitive Psychotherapy*, 1995؛ 23: 301- 320.

Willlmott, Sasi A., Boardman, Jed A. P., Henshaw, Carol A., Jones, Peter. (2004). Understanding General Health Questionnaire (GHQ-28) score and its threshold. *Soc Psychiatry Psychiatr Epidemiol*. 39: 613-617.

Wissing, M.P.,, Fourie, A. (2000). *Spirtuality as a Component of Psuchological wellbeing*. 27th international congress of psychology, Stockholm, Sweden.